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## CALCULUS.

187. Proposed by L. T. JACKSON, St. Louis, Mo.

Find the area of the ellipse

$$x=a_1+a_2\cos\theta+a_3\sin\theta,$$
$$y=b_1+b_2\cos\theta=b_3\sin\theta.$$

188. Proposed by SAUL EPSTEEN.

Evaluate $\int \frac{y(y^2+2)dy}{(y^4+3y^2+3)^{1/2}(y^2+1)}$.

## AVERAGE AND PROBABILITY.

130. Proposed by L. C. WALKER, A. M., Santa Barbara, Cal.

Three points are taken at random in a given circle, and a circle passed through them. The probability that the circle through the random points will be wholly in the given circle is $\frac{2}{5}$.

# NOTES.

A number of good problems in Algebra, for solution, are desired.

Mr. T. H. Barton has been appointed instructor in mathematics in Dartmouth College.

Dr. E. L. Dodd has been appointed instructor in mathematics in the University of Iowa.

At Rutgers College Prof. E. A. Bowser has been made emeritus professor of mathematics.

Mr. A. Hall has been appointed instructor in mathematics in the United States Naval Academy.

Mr. H. V. Gummere has been appointed professor of mathematics in the Drexel Institute, Philadelphia.

Dr. H. C. Converse has been appointed instructor in mathematics in the Baltimore Polytechnic Institute.

Mr. E. D. Grant has been promoted to an assistant professorship in mathematics and physics at the Michigan College of Mines.

Mr. T. E. Gravatt and Mr. C. F. Sharp have been appointed to instructorships in mathematics in the Pennsylvania State College.